

## Wireless Integrated Microelectronic Vacuum Sensor System, Phase II

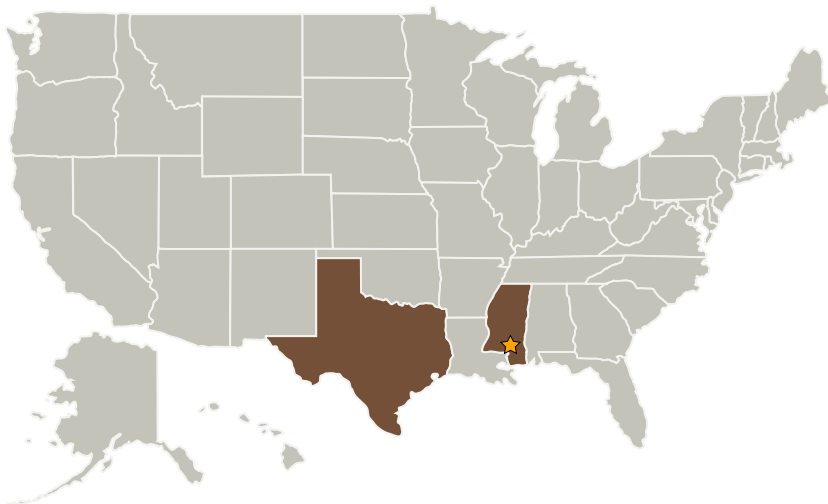


Completed Technology Project (2006 - 2008)

## Project Introduction

The efficient utilization of ground test facilities and launch sites is critical for the success of NASA's New Vision for Space Exploration. The development of an innovative Wireless Integrated Microelectronic Vacuum Sensor System for monitoring vacuum-jacketed pipelines is proposed that would address the need of NASA for measurements of the insulating capability of cryogenic lines for ground testing, flight vehicles, and launch facilities. Recent advances in both MEMS vacuum gauge technology and low-power, long range radio frequency transceivers has enabled the development of a low-cost, miniature device with sophisticated capabilities. The complete, self-contained, battery operated system would fit within the volume of the current vacuum gauges only and provide periodic, continuous monitoring of vacuum conditions throughout the entire facility. Such a system would reduce operations costs and increase vacuum jacket reliability by eliminating the need for human intervention, reduce package, wiring size and weight, and provide constant network reporting and monitoring of the facility from any Internet enabled computer. Beyond this application for vacuum monitoring, the long-range wireless sensor networking capabilities developed under this program would be applicable to a vast array of other sensor types and control applications throughout Stennis Space Center and other NASA facilities.

## Primary U.S. Work Locations and Key Partners



Wireless Integrated  
Microelectronic Vacuum Sensor  
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## Organizational Responsibility

### Responsible Mission Directorate:

Space Technology Mission  
Directorate (STMD)

### Lead Center / Facility:

Stennis Space Center (SSC)

### Responsible Program:

Small Business Innovation  
Research/Small Business Tech  
Transfer

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Organizations Performing Work	Role	Type	Location
★Stennis Space Center(SSC)	Lead Organization	NASA Center	Stennis Space Center, Mississippi
Invocon, Inc.	Supporting Organization	Industry Veteran-Owned Small Business (VOSB)	Conroe, Texas

## Primary U.S. Work Locations

Mississippi	Texas
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## Project Management

**Program Director:**

Jason L Kessler

**Program Manager:**

Carlos Torrez

## Technology Areas

**Primary:**

- TX08 Sensors and Instruments
  - └ TX08.3 In-Situ Instruments and Sensors
    - └ TX08.3.4 Environment Sensors